![Fujitsu logo] **FUJITSU**    THE POSSIBILITIES ARE INFINITE
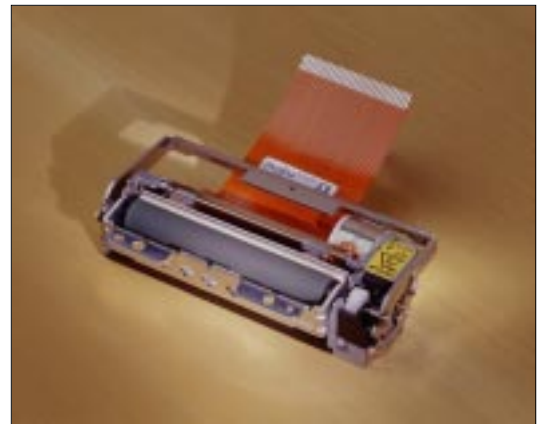
# BATTERY DRIVE, FTP-608 Series

## 2" HIGH SPEED THERMAL PRINTER

# FTP-628MCL113, Easy Load and Mount Method

## ■ OVERVIEW

The easy loading FTP-608 MCL Series is ultra compact high speed, battery driven thermal printer, printing on 2-inch wide paper (58mm) where platens are removable. Our unique platen removal mechanism improved paper loading and maintenance.

The FTP-608 MCL series can be used for a variety of applications, such as portable terminals, POS, ticket issuing terminals, label printers, banking terminals, and measurement and medical equipment.

## ■ HIGHLIGHTS

- **Easy loading type**
  Our original platen removal mechanism improved paper loading and maintenance.

- **Easy mounting platen**
  The platen unit bracket allows attachment to cover with screws.

- **Ultra compact**
  Height 15.5 mm, width 75 mm, depth 36.5 mm for the 2 inch model, excluding platen unit.

- **High speed printing**
  It can print at 60 mm/s (480 dotlines/s) maximum by using Fujitsu's unique head drive control.

- **High resolution printing**
  8 dots/mm of resolution printing is possible.

## ■ PART NUMBERS

| Item | | Part Number |
|---|---|---|
| Printer mechanism | | FTP-628MCL113 (2-inch wide paper: 58mm) with platen open detect switch |
| LSI for driving | | FTP-628CU301 (ANK only) |
| Interface Board | Parallel | FTP-628DCL300 (Centronics) |
| | Serial | FTP-628DSL305 (RS 232C) |
| Interface Cables | Parallel | FTP-628Y202 |
| | Serial | FTP-628Y302 |
| Power cable | Head, motor, logic | FTP-628Y402 |

## ■ SPECIFICATIONS

| Item | Specifications |
|---|---|
| Part number | FTP-628MCL113 |
| Printing method | Thermal-line dot method |
| Dot structure | 384 dots/line |
| Dot pitch (Horizontal) | 0.125 mm (8 dots/mm)—Dot density |
| Dot pitch (Vertical) | 0.125 mm (8 dots/mm)—Line feed pitch |
| Effective printing area | 48 mm |
| Number of columns | ANK 32 columns/line (maximum 12x 24 dot font) |
| Paper width | 58 mm$^{+0}_{-1}$ |
| Paper thickness | 60 to 100 $\mu$ m (some paper in this range may not be used because of paper characteristics |
| Printing Speed | Maximum 60mm/sec. (480 dot line/sec.) at 8.5V |
| Character types | Alphanumeric, katakana: 159 types<br>International and special characters: 195 types<br>JIS Kanji level 1, level 2, non-Kanji<br>(supported only when Kanji CG is mounted): about 6800 types |
| Character, dimensions (H×W), number of columns | 12 × 24 dots, (1.5 × 3.0mm), 32 columns: ANK<br>24 × 24 dots, (3.0 × 3.0mm), 16 columns:ANK, Kanji<br>8 × 16 dots, (1.0 × 2.0 mm), 48 columns: ANK<br>16 × 16 dots, (2.0 × 2.0 mm), 24 columns: ANK, Kanji |

## ■ SPECIFICATIONS

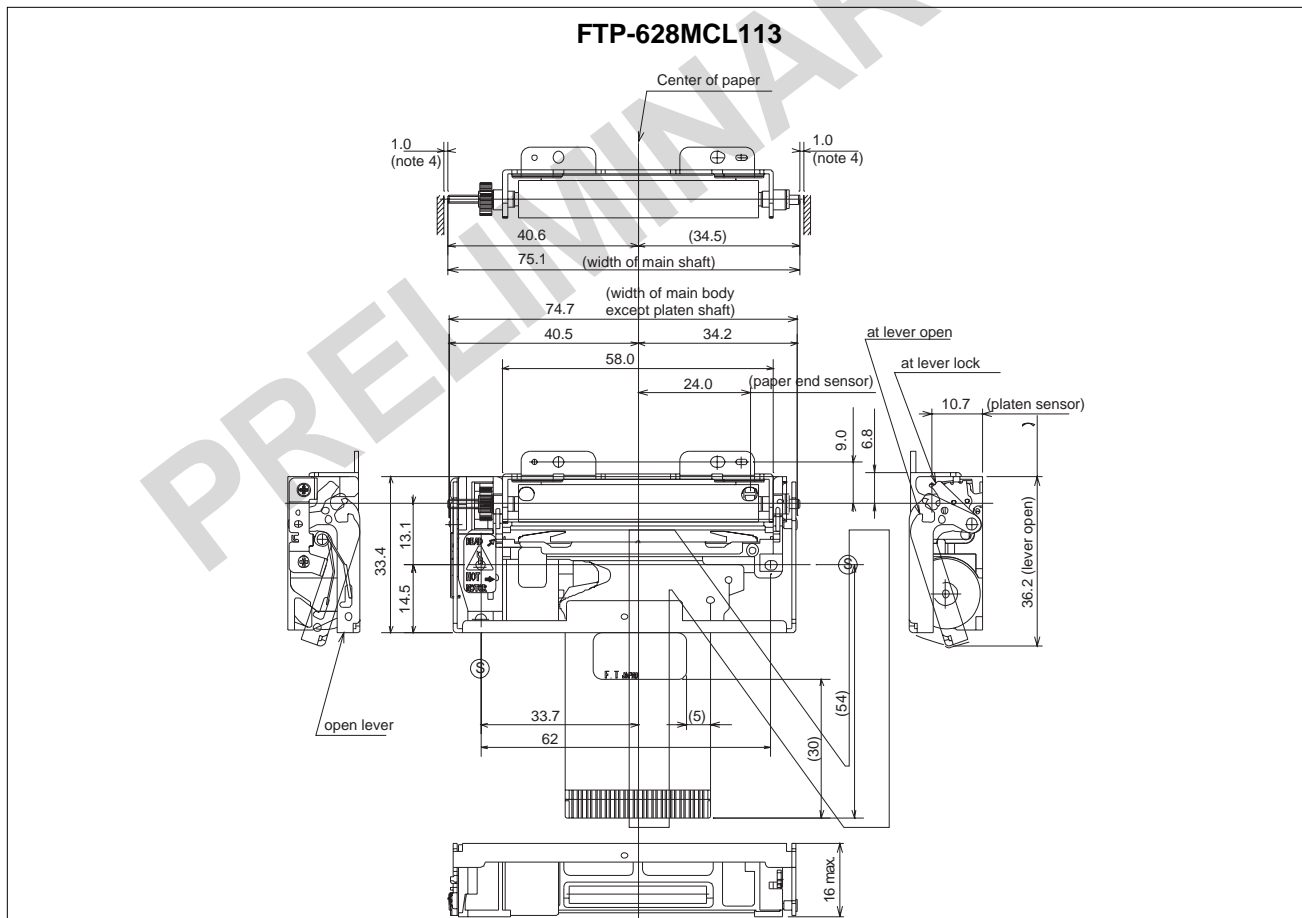| Item | | Specification |
|---|---|---|
| | | FTP-628MCL113 |
| Interface | | Conforms to RS232C / Centronics |
| Operating Voltage | For print head | 4.2 VDC to 8.5 V, average current 0.87A (0.93), peak value Printing ratio: 12.5%, printing speed 50mm/sec. at 7.2 V |
| | For motor | 4.2 VDC to 8.5 V, 1 A maximum |
| | For logic | 5 VDC ± 5%, 0.1 A maximum |
| Dimensions (WxDxH) | Printer mechanism | 75.1 x 38.4 x 15.5 mm (with platen set) |
| | Interface board | 69.3 x 52 x 15 mm |
| Weight | Printer mechanism | Approximately 51g |
| | Interface board | Approximately 20g |
| Head life | | Pulse resistance: 100 million pulses/dot (under our standard conditions). Abrasion resistance: paper traveling distance 50km (print ratio: 25% or less) |
| Operating environment | Operating temperature* | 0°C to +50°C |
| | Operating humidity | 20 to 85% RH (no condensation) |
| | Storage temperature | -20°C to +60°C (paper not included) |
| | Storage humidity | 5 to 95% RH (no condensation) |
| Detection function | Head temperature detection | Detected by thermistor |
| | Paper out/mark detection | Detected by photo-interrupter |
| | Platen open/close | Slide switch |
| Recommended thermal sensitive paper | High sensitive paper: | TF50KS-E4 (Nippon Paper) |
| | Standard paper: | TK50KS-E (Nippon Paper) PD150R (Oji Paper) FTP-020P0701 (58mm) |
| | Medium life storage paper: | TK60KS-F1 (Nippon Paper) FTP-020P0102 (58mm) PD170R (Oji Paper) AFP220VBB-1 (Mitsubishi Paper) |
| | Long life storage paper: | PD160R-N (Oji Paper) AFP-235 (Mitsubishi Paper) TP50KJ-R (Nippon Paper) HA112AA (Nippon Paper) |

*+5°C to +40°C printing density assurance rance (-25 to 70°C capability)

## ■ FUNCTION

| | Item | | Item |
|---|---|---|---|
| 1. | Test print function | 8. | Mark detection function |
| 2. | Paper out detection | 9. | MCU operation abnormality detection |
| 3. | Paper near end detection | 10. | Power ON/OFF sequence protection |
| 4. | Thermal head temperature abnormality detection | 11. | Motor over-current protection |
| 5. | Blow-out fuse detection | 12. | Hardware timer |
| 6. | Head voltage abnormality detection | | |
| 7. | Motor power saving function | | |

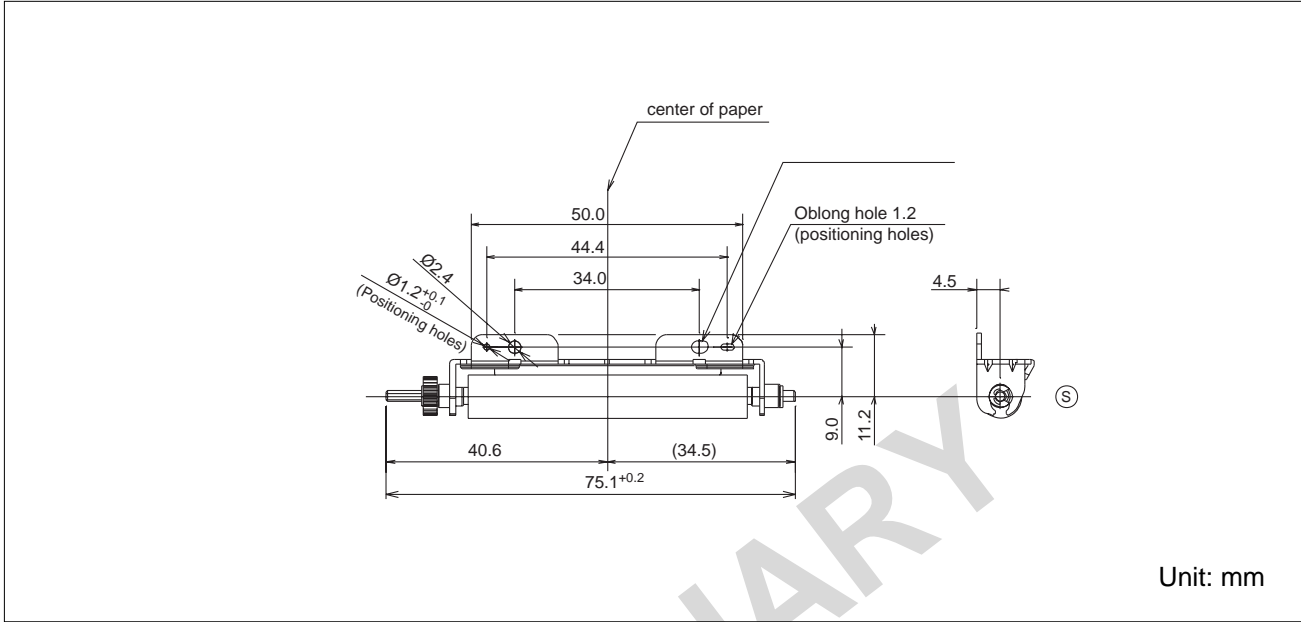## ■ DIMENSIONS

### 1. Printer mechanism



**FTP-628MCL113**

Note: 1. Dimensions are nominal value (tolerance ±5 unless otherwise specified).
2. Dimension listed in ( ) is for reference
3. S shows the standard center line
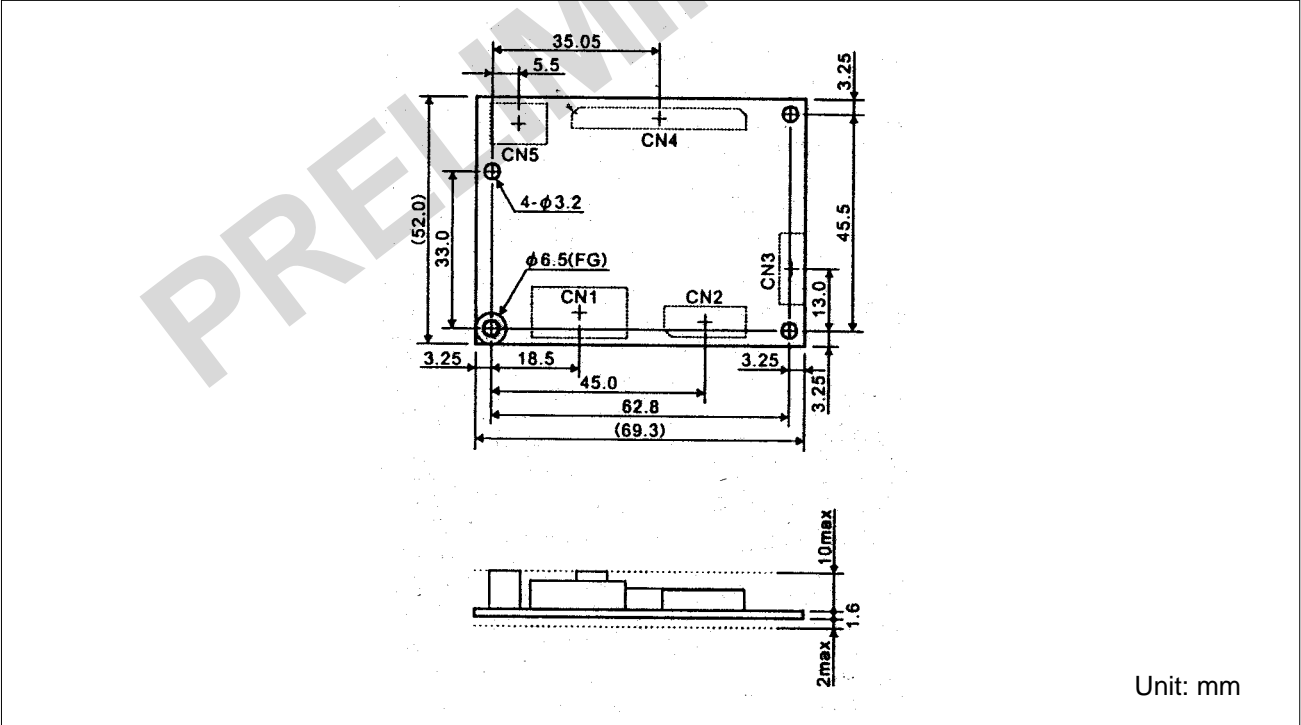4. Platen shaft moves right and left, Please make the space of it about 1mm between the cover and platen shaft.

Unit: mm

## ■ DIMENSIONS

### 2. Platen Unit



Unit: mm

### 3. Interface board



Unit: mm

## ■ PRINTER CONNECTOR (FLEXIBLE PT BOARD) PIN ARRAYS
### FTP-628 MCL113

**Thermal head, control circuit side connector: 52610-3090 Molex or equivalent product**

| No | Signal | I/O | Contents |
|----|--------|-----|----------|
| 1 | PHK | — | Cathode for photo interruptor |
| 2 | VSEN | I | paper sensor power |
| 3 | PHE | O | Emittor for photo interruptor |
| 4 | SW1 | —/I | Platen release switch |
| 5 | SW2 | —/I | Platen release switch |
| 6 | VH | — | Head drive power |
| 7 | VH | — | |
| 8 | DIN | I | Data in |
| 9 | CLK | I | Synchronous clock for communication |
| 10 | GND | — | Ground power supply for thermal head |
| 11 | GND | — | |
| 12 | STB6 | I | Thermal head energizing control signal |
| 13 | STB5 | I | |
| 14 | STB4 | I | |
| 15 | VDD | I | Logic power |
| 16 | TH | O | Thermally sensitive resistor input termnial 1 |
| 17 | TH | O | Thermally sensitive resistor input termnial 2 |
| 18 | STB3 | I | Thermal head energizing control signal |
| 19 | STB2 | I | |
| 20 | STB1 | I | |
| 21 | GND | — | Ground power supply for thermal head |
| 22 | GND | — | |
| 23 | $\overline{\text{LAT}}$ | I | Data latch |
| 24 | DO | O | Data out |
| 25 | VH | I | Power supply for thermal head |
| 26 | VH | I | |
| 27 | MT/A | I | Stepping motor excitation signal |
| 28 | MT/$\overline{\text{A}}$ | I | |
| 29 | MT/B | I | |
| 30 | MT/$\overline{\text{B}}$ | I | |

Do not plug or unplug the FPC when power is on.

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